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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/508,403

09/21/2004

Shinichiro Yamada

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EXAMINER

BRUNSMAN, DAVID M

ART UNIT

PAPER NUMBER

1755

MAIL DATE

DELIVERY MODE

07/25/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/508,403

Applicant(s)

YAMADA ET AL.

Examiner

David M. Brunzman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-13 and 15-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-13 and 15-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Applicant's response filed 30 April 2007 has been carefully considered. The rejection under 35 U.S. C. 112 has been withdrawn in view of applicant's response. Applicant's amendment and argument with respect to the rejections over the prior art is addressed in the modified rejections set forth below.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5-7, 10-13, 15, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6107378 in view of US 6512174 and US 5872169.

The '378 patent teaches a method for forming housings for electronic appliances by compounding a biodegradable resin such as polylactic acid and a hydrolysis inhibitor such as an isocyanate or a carbodiimide to maintain mechanical strength. See examples 4-6. The difference between that patent and the instant claims is the addition of a flame retardant such as high purity magnesium hydroxide having a BET surface area less than 5 m²/g and the particular biodegradable resin used in the examples. The '174 patent teaches that flame retardants including magnesium hydroxide can be added to similar resins. (See column 5, line 29). It would have been obvious to one of ordinary skill in the art to add a magnesium hydroxide flame retardant to the composition of the '378 patent for that reason. The '169 patent teaches a process for making substantially pure magnesium hydroxide that performs exceptionally well as a flame retardant for resin having a BET surface area of 0.9-3.5 m²/g. See examples 1-14 and column 1, lines 9-11. It would have been obvious to one of ordinary skill in the art to select a magnesium hydroxide like that of the '169 patent because it teaches they perform particularly well. Column 1, lines 25-29 of the '378 patent

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teach that the polylactic acid resins of the examples, polyvinyl alcohol and polysaccharides are equivalent as biodegradable resins in the composition. It would have been obvious to employ either polyvinyl alcohol or a polysaccharide as the resin as it is taught as functioning equivalently. Column 3, lines 53-54 of the '174 patent teach that the known flame retardants specified as also effective for biodegradable resin including a polysaccharide such as a cellulose derivative of polyvinyl alcohol such that one of ordinary skill in the art would expect said flame retardants to similarly retard flame in polysaccharide and polyvinyl alcohol resins. Claims 18 and 19 are made obvious by the combination. The properties of the composition are dependent upon the make-up of the composition itself and a combination of teachings leading to the claimed composition would necessarily exhibit the same recited properties. Neither the instant claims nor, the specification teach that any limitation in addition to those set forth in the instant claims, and made obvious by the combination of teachings set forth, is necessary to observe the properties recited in claims 18 and 19.

The percentage of hydroxide compound recited in claim 15 would have been obvious to one of ordinary skill in the art for the following reasons. Clearly, only simple experimentation would be required, on the order of mixing a series of compositions having different proportions of a known flame retardant, for one of ordinary skill in the art to obtain an optimal amount. Routine experimentation is within the level of ordinary skill in the art. Second, US 6512174 supports a finding that the art recognizes selection of the proportion of flame retardant being within the level of ordinary skill in the art in that column 5, lines 15-42 recite the possible addition of various known additives to polylactic acid polymers without the necessity of recited particular amounts. Third, US 5258422, includes claim 18, assumed to be found fully enabled by the inventor thereof and the patent office, reciting addition of flame retardants to polymer compositions which is supported only by specification disclosure of flame retardant leaving the specific amounts up to the technician.

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Nor, does the instant specification exhibit unexpected results for comparative compositions having the same flame retardants in amounts outside the range of claim 15.

This office action clearly indicates that the motivation to modify the '378 patent disclosure lies in the prior art teaching that additional materials such as magnesium oxide, talc and silica act as flame retardants. Every comparative example of the instant specification serves to confirm this observation that addition of a flame retardant to a polymeric composition retards flame.

Claims 8, 9 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6107378 in view of US 6512174 and US 6720365.

The '378 patent teaches a method for forming housings for electronic appliances by compounding a biodegradable resin such as polylactic acid and a hydrolysis inhibitor such as an isocyanate or a carbodiimide. See examples 4-6. The difference between that patent and the instant claims is the addition of a flame retardant and the particular biodegradable resin used in the examples. The '174 patent teaches that flame retardants can be added to similar resins. (See column 5, line 28). Column 8, line 15 of 6720365 teaches the use of phosphorous compounds in making flame retardant compositions using similar resins. It would have been obvious to one of ordinary skill in the art to add a phosphorous compound to the composition of the '378 patent because the prior art teaches that it is useful in formulation of flame retardant resin compositions such as desired in the compounding of compositions for making housings for electronic appliances. Column 1, lines 25-29 of the '378 patent teach that the polylactic acid resins of the examples, polyvinyl alcohol and polysaccharides are equivalent as biodegradable resins in the composition. It would have been obvious to employ either polyvinyl alcohol or a polysaccharide as the resin as it is taught as functioning equivalently. Column 3, lines 53-54 of the '174 patent teach that the known flame retardants specified as also effective for biodegradable resin including a

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polysaccharide such as a cellulose derivative of polyvinyl alcohol such that one of ordinary skill in the art would expect said flame retardants to similarly retard flame in polysaccharide and polyvinyl alcohol resins

The percentage of phosphorous compound recited in claim 16 would have been obvious to one of ordinary skill in the art for the following reasons. Clearly, only simple experimentation would be required, on the order of mixing a series of compositions having different proportions of a known flame retardant, for one of ordinary skill in the art to obtain an optimal amount. Routine experimentation is within the level of ordinary skill in the art. Second, US 6512174 supports a finding that the art recognizes selection of the proportion of flame retardant being within the level of ordinary skill in the art in that column 5, lines 15-42 recite the possible addition of various known additives to polylactic acid polymers without the necessity of recited particular amounts. Third, US 5258422, includes claim 18, assumed to be found fully enabled by the inventor thereof and the patent office, reciting addition of flame retardants to polymer compositions which is supported only by specification disclosure of flame retardant leaving the specific amounts up to the technician. Nor, does the instant specification exhibit unexpected results for comparative compositions having the same flame retardants in amounts outside the range of claim 16.

This office action clearly indicates that the motivation to modify the '378 patent disclosure lies in the prior art teaching that additional materials such as magnesium oxide, talc and silica act as flame retardants. Every comparative example of the instant specification serves to confirm this observation that addition of a flame retardant to a polymeric composition retards flame.

Claims 8, 9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6107378 in view of US 6512174 and US 2001/0018487.

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The '378 patent teaches a method for forming housings for electronic appliances by compounding a biodegradable resin such as polylactic acid and a hydrolysis inhibitor such as an isocyanate or a carbodiimide. See examples 4-6. The difference between that patent and the instant claims is the addition of a flame retardant and the particular biodegradable resin used in the examples. The '174 patent teaches that flame retardants can be added to similar resins. (See column 5, line 28). Paragraph 53 of US 2001/0018487 teaches the use of 5-40 micron silica in making flame retardant resin compositions. It would have been obvious to one of ordinary skill in the art to add 5-40 micron silica to the composition of the '378 patent because the prior art teaches that it is useful in formulation of flame retardant resin compositions such as desired in the compounding of compositions for making housings for electronic appliances. Column 1, lines 25-29 of the '378 patent teach that the polylactic acid resins of the examples, polyvinyl alcohol and polysaccharides are equivalent as biodegradable resins in the composition. It would have been obvious to employ either polyvinyl alcohol or a polysaccharide as the resin as it is taught as functioning equivalently. Column 3, lines 53-54 or the '174 patent teach that the known flame retardants specified as also effective for biodegradable resin including a polysaccharide such as a cellulose derivative of polyvinyl alcohol such that one of ordinary skill in the art would expect said flame retardants to similarly retard flame in polysaccharide and polyvinyl alcohol resins.

The percentage of silica compound recited in claim 17 would have been obvious to one of ordinary skill in the art for the following reasons. Clearly, only simple experimentation would be required, on the order of mixing a series of compositions having different proportions of a known flame retardant, for one of ordinary skill in the art to obtain an optimal amount. Routine experimentation is within the level of ordinary skill in the art. Second, US 6512174 supports a finding that the art recognizes selection of the proportion of flame retardant being within the level of ordinary skill in the art in that column 5, lines 15-

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42 recite the possible addition of various known additives to polylactic acid polymers without the necessity of recited particular amounts. Third, US 5258422, includes claim 18, assumed to be found fully enabled by the inventor thereof and the patent office, reciting addition of flame retardants to polymer compositions which is supported only by specification disclosure of flame retardant leaving the specific amounts up to the technician. Nor, does the instant specification exhibit unexpected results for comparative compositions having the same flame retardants in amounts outside the range of claim 17.

This office action clearly indicates that the motivation to modify the '378 patent disclosure lies in the prior art teaching that additional materials such as magnesium oxide, talc and silica act as flame retardants. Every comparative example of the instant specification serves to confirm this observation that addition of a flame retardant to a polymeric composition retards flame.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Brunzman whose telephone number is 571-272-1365. The examiner can normally be reached on M, Th, F, Sa; 7:00-5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

David M Brunzman
Primary Examiner
Art Unit 1755

DMB

A handwritten signature in black ink, appearing to read 'David M Brunzman', with a long horizontal flourish extending to the right.